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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/580,559	05/30/2000	Motoo Nishihara	Q59423	1590

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EXAMINER

YAO, KWANG BIN

ART UNIT PAPER NUMBER

2667

DATE MAILED: 12/18/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

TS

Office Action Summary

Application No.

09/580,559

Applicant(s)

NISHIHARA, MOTOO

Examiner

Kwang B. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-22 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan on 1/6/99. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

Claim Objections

2. Claim 18 is objected to because of the following informalities: claim 18, line 4, it appears that the limitation of "said packet transfer apparatus of claim 7" is a typo, and claim 18 appears to be an independent claim rather than dependent claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3, 5-9, 12, 15, 17, 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Vargo et al. (US 6,477,164).

Vargo et al. discloses a system for real-time data and voice transmission comprising the following features: regarding claim 1, depicted in Fig. 1, causing a transmission-source access network (114) to generate a packet to be transferred to a destination access network (116) and transmit the packet to a transmission-source packet transfer apparatus (124) connected to the transmission-source access network (114); causing the transmission-source packet transfer apparatus (124) to convert the packet transmitted from the transmission-source access network (114) into a superpacket (Fig. 4) having a length n times, n is an integer of not less than 2, larger than a fixed-length cell as a switching unit of relay means arranged on a network serving as a backbone, and send the superpacket to the network (132); causing the network to relay the superpacket (Fig. 4) using the relay means and transfer the superpacket to a destination packet transfer apparatus (126) connected to the destination access network (116); and causing the destination packet transfer apparatus (126) to reassemble the packet generated by the transmission-source access network (140) on the basis of the superpacket transferred from the network (132) and send the packet to the destination access network (116); regarding claim 2, causing the transmission-source packet transfer apparatus (124) to individually store (Fig. 6, 602) the transmitted packets in units of destination packet transfer apparatuses (126), form the superpacket for each destination packet transfer apparatus (126), and send the superpacket to the

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network (132), and causing the destination packet transfer apparatus (126) to individually store the superpackets transferred from the network in units of transmission-source packet transfer apparatuses (124) and reassemble the packet for each transmission-source packet transfer apparatus (124); regarding claim 3, causing the transmission-source packet transfer apparatus (124) to detect for each destination packet transfer apparatus (126) that the superpacket is not formed for a first time-out time (column 6, lines 35-52), and if a packet is stored in association with the destination packet transfer apparatus without construction, form the superpacket from the packet and send the superpacket (Fig. 4) to the network; regarding claim 5, when the packet transmitted from the transmission-source access network (114) crosses a plurality of superpackets, causing the transmission-source packet transfer apparatus (124) to divisionally send the packet to the network using the plurality of superpackets, and when the packet in the superpacket transferred from the network crosses a plurality of superpackets, causing the destination packet transfer apparatus (126) to connect packet data crossing the plurality of superpackets to reassemble the original packet generated by the transmission-source access network (114) and send the packet to the destination access network (126); regarding claim 6, causing the transmission-source packet transfer apparatus to store (Fig. 6, 602), as a transmission-source address and destination address in a header of the superpacket (Fig. 4), unique network addresses defined only in the network and assigned to the transmission-source packet transfer apparatus and the destination packet transfer apparatus, respectively, and send the superpacket to the network, and causing each relay means in the network to look up (Fig. 6, 606, and Fig. 7) the header of the transferred superpacket to specify a relay destination of the superpacket in accordance with the network address assigned to the destination packet transfer

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apparatus and transfer the superpacket to the destination packet transfer apparatus; regarding claim 7, forming means (Fig. 6, 604, and Fig. 8) for converting the packet into a superpacket having a length n times, n is an integer of not less than 2, larger than a fixed-length cell as a switching unit of the relay means, and sending the superpacket to the network (132); and reassembler means (Fig. 9, 916, 918) for extracting the packet from the superpacket (Fig. 4) sent from the network and sending the packet (Fig. 9, 920) to the access network; regarding claim 8, wherein the forming means comprises first storage means (Fig. 6, 602) having queues for storing the packets in units of packet transfer apparatuses arranged between the network and an access network as a destination of the packet, stores the packets in the queues in units of destinations, detects (Fig. 6, 604) that packets in number necessary for formation of the superpacket are stored, and extracts (Fig. 6, 604) the packets from the queue to form the superpacket; regarding claim 9, wherein the construction means comprises, for each queue on the first storage means (Fig. 6, 602), first time count means for starting time counting every time the superpacket is formed and detecting an elapse of a first time-out time from the time count start time, and when the elapse of the first time-out time is detected, forms the superpacket from the packets stored in the queue (column 6, lines 35-52); regarding claim 12, the reassembler means (Fig. 6, 608) comprises second storage means having queues (Fig. 6, 608) for storing the superpackets in units of packet transfer apparatuses arranged between the network and a transmission-source access network, stores the superpacket in the queue, and reassembles the packet from the stored superpacket; regarding claim 15, the forming means detects that the packet crosses a plurality of superpackets and divisionally stores the packet in the plurality of superpackets, and the reassembler means detects that the packet on the superpacket crosses a plurality of superpacket

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and links packet data divisionally stored in the plurality of superpackets to reassemble the original packet generated by the transmission-source access network (Fig. 9, 904, 906, 908, 910); regarding claim 17, wherein a header of the superpacket has the same format as that of a header of the packet (Fig. 4); regarding claim 18, an access network for transmitting/receiving a packet (124); relay means (132) for relaying the packet; and a network (132) serving as a backbone for transferring a superpacket (Fig. 4) having a length n times, n is an integer of not less than 2, larger than a fixed-length cell as a switching unit of the relay means, wherein the packet transfer apparatus (124) performs mutual conversion between the packet transmitted/received by the access network and the superpacket transferred on the network and transfers the packet transmitted from a transmission-source access network (114) to a destination access network (116) in a form of the superpacket (Fig. 4) through the relay means in the network; regarding claim 19, wherein the packet transfer apparatus (124) and the relay means are assigned unique network addresses (Fig. 4) defined only in the network, and network addresses of packet transfer apparatuses connected to the transmission-source (114) and destination access networks (116) are stored in a header of the superpacket as a transmission-source address and destination address; regarding claim 20, wherein for superpackets (Fig. 4) having the same destination packet transfer apparatus, different network addresses are assigned to destination addresses in headers of the superpackets in accordance with a type of destination access network connected to the destination packet transfer apparatus; regarding claim 21, wherein the relay means comprises a route search table (Fig. 7) which stores entries in at least number corresponding to the numbers of the packet transfer apparatuses and relay means, each entry making a destination address in a header of the superpacket correspond to a relay destination of the superpacket, and route search

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means for searching the route search table on the basis of the destination address in the header of the superpacket to specify the relay destination of the superpacket; regarding claim 22, wherein for the same network flow as a traffic, through the relay means in the network, from the packet transfer apparatus connected to the transmission-source access network (114) to the packet transfer apparatus (124) connected to the destination access network (116), superpackets (Fig. 4) corresponding to the same network flow have the same header. See column 3-9.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 10, 11, 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vargo et al. (US 6,477,164) in view of Miller et al. (US 6,247,058).

Vargo et al. discloses the claimed limitations above. Vargo et al. does not disclose the following features: regarding claim 4, causing the destination packet transfer apparatus to detect for each transmission-source packet transfer apparatus that the packet is not reassembled for a second time-out time, and if a superpacket is stored in association with the transmission-source packet transfer apparatus without reassembly, discard the superpacket; the first time-out time is determined on the basis of a predetermined minimum band for each traffic on the network; regarding claim 11, wherein the first time-out time is determined on the basis of a predetermined allowable network delay time for each traffic on the network; regarding claim 13, wherein the

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reassembler means comprises, for each queue on the second storage means, second time count means for starting time counting every time the packet is reassembled and detecting an elapse of a second time-out time from the time count start time, and when the elapse of the second time-out time is detected, discards the superpacket staying in the queue; regarding claim 14, wherein the second time-out time is determined on the basis of a predetermined minimum band or maximum allowable value of network delay for each traffic on the network, delay distribution time in the network, and predetermined protection time. Miller et al. discloses an apparatus for processing network packets comprising the following features: regarding claim 4, causing the destination packet transfer apparatus to detect for each transmission-source packet transfer apparatus that the packet is not reassembled for a second time-out time (Fig. 9, 192), and if a superpacket is stored in association with the transmission-source packet transfer apparatus without reassembly, discard (Fig. 9, 200) the superpacket; the first time-out time is determined on the basis of a predetermined minimum band for each traffic on the network (column 11, line 65 to column 12, line 15); regarding claim 11, wherein the first time-out time is determined on the basis of a predetermined allowable network delay time for each traffic on the network (column 6, line 59-64); regarding claim 13, wherein the reassembler means comprises, for each queue on the second storage means, second time count means for starting time counting every time the packet is reassembled and detecting an elapse of a second time-out time from the time count start time, and when the elapse of the second time-out time is detected, discards the superpacket staying in the queue (Fig. 9); regarding claim 14, wherein the second time-out time is determined on the basis of a predetermined minimum band or maximum allowable value (column 11, line 65 to column 12, line 15) of network delay for each traffic on the network,

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delay distribution time (column 6, line 59-64) in the network, and predetermined protection time.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Vargo et al., by using the features, as taught by Miller et al., in order to provide a reliable communication by reducing network congestion and conserving network bandwidth. See Miller et al., column 4, lines 35-65.

Allowable Subject Matter

7. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pierson, Jr. (US 6,272,128) discloses a system for emulating a T1 link.

Kurobe et al. (US 6,233,251) discloses a multiplex system.

Birdwell et al. (US 6,172,972) discloses a method for encoding network data.

Kasslin et al. (US 6,075,789) discloses a system for connecting packet.

Doshi et al. (US 5,936,965) discloses a method for transmission of data.

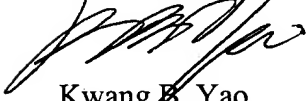
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang B. Yao whose telephone number is 703-308-7583. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

KWANG BIN YAO
PRIMARY EXAMINER



Kwang B. Yao
December 11, 2003